

WHAT IS CLAIMED IS:

1. A computer implemented method for rendering a synthesized image, comprising:

generating a geometric component corresponding to a selected image based on identified feature points from a set of representative images having the identified feature points; and
generating the selected image from a composite of the set of representative images based on the geometric component.

2. The method of claim 1 wherein generating a geometric component includes calculating a plurality of values, wherein a value of the plurality of values is associated with each representative image, and wherein generating the selected image comprises using the plurality of values to composite the set of representative images.

3. The method of claim 1 wherein the synthesized image and each of the set of representative images comprises a plurality of subregions defined proximate each other, and wherein generating a geometric component is performed for each subregion, and wherein generating the selected image comprises generating a composite of the set of representative images based on the corresponding geometric component for each subregion, and rendering a synthesized subregion proximate each other to generate the selected image.

4. The method of claim 2 wherein rendering a synthesized subregion proximate each other includes blending at least some boundaries between adjacent subregions.

5. The method of claim 4 wherein blending occurs along boundaries without discontinuities in texture.

6. The method of claim 3 wherein at least one synthesized subregion is based on a quantity of a set of representatives different than another synthesized subregion.

7. The method of claim 1 wherein the feature points correspond to a two-dimensional image.

8. The method of claim 7 wherein the synthesized image and each of the set of representative images comprises a plurality of subregions defined proximate each other, and wherein generating a geometric component is performed for each subregion, and wherein generating the selected image comprises generating a composite of the set of representative images based on the corresponding geometric component for each subregion, and rendering a synthesized subregion proximate each other to generate the selected image.

9. The method of claim 8 wherein rendering a synthesized subregion proximate each other includes blending at least some boundaries between adjacent subregions.

10. The method of claim 1 wherein the feature points correspond to a three-dimensional image.

11. The method of claim 10 wherein the synthesized image and each of the set of representative images comprises a plurality of subregions defined proximate each other, and wherein generating a geometric component is performed for each subregion, and wherein generating the selected image comprises generating a composite of the set of representative images based on the corresponding geometric component for each subregion, and rendering a synthesized subregion proximate each other to generate the selected image.

12. The method of claim 11 wherein rendering a synthesized subregion proximate each other includes blending at least some boundaries between adjacent subregions.

13. The method of claim 1 wherein generating a geometric component corresponding to a selected image based on identified feature points on the image comprises ascertaining a position of at least one feature point from a change in position of another feature point.

14. The method of claim 13 wherein the feature points are grouped in sets, each set pertaining to a different region of the synthesized image, and wherein ascertaining a position of at least one feature point comprises ascertaining positions of feature points in a set from a change in position of a feature point in the set.

15. The method of claim 14 wherein ascertaining a position of at least one feature point comprises ascertaining positions of feature points in the set using principle components derived from analyzing positional changes of feature points in the set for the representative images through principle component analysis.

16. The method of claim 15 wherein ascertaining a position of at least one feature point comprises ascertaining positions of feature points in a first set from a change in position of at least one feature point in another set.

17. The method of claim 16 wherein the sets are hierarchical.

18. The method of claim 1 and further comprising:
monitoring feature points of a user; and
wherein generating a geometric component corresponding to a selected image includes generating the geometric component corresponding to a change in position of feature points of the user; and
wherein generating the selected image corresponds to the change in position of feature points of the user.

19. The method of claim 18 wherein generating a geometric component corresponding to a selected image based on identified feature points comprises ascertaining a position of at least one feature point from a change in position of another feature point.

20. The method of claim 1 and further comprising:
 rendering an image with feature points identified thereon; and
 receiving information indicative of a user moving a feature point.
21. The method of claim 20 wherein generating a geometric component corresponding to a selected image based on identified feature points comprises ascertaining a position of at least one feature point from a change in position of another feature point.
22. The method of claim 1 wherein the selected image comprises a selected expression.
23. The method of claim 22 wherein the selected image comprises a selected facial expression.
24. The method of claim 1 wherein the each of the set of representative images are aligned with respect to a reference image.
25. A computer implemented method for rendering a synthesized expression, comprising:
 accessing a set of stored representatives of various expressions having corresponding feature points associated therewith;
 ascertaining a position of at least one feature point from a change in position of another feature point based on a change in movement of the

selected feature point and based on the set of stored representatives of various expressions; and
rendering a new expression with two or more feature points having changed position.

26. The method of claim 25 wherein the feature points are grouped in sets, each set pertaining to a different region of the synthesized image, and wherein ascertaining a position of at least one feature point comprises ascertaining positions of feature points in a set from a change in position of one feature point in the set.

27. The method of claim 26 wherein ascertaining a position of at least one feature point comprises ascertaining positions of feature points in the set using principle components derived from analyzing positional changes of feature points in the set of stored representatives of various expressions through principle component analysis.

28. The method of claim 27 wherein ascertaining a position of at least one feature point comprises ascertaining positions of feature points in a first set from a change in position of at least one feature point in another set.

29. The method of claim 28 wherein the sets are hierarchical.

30. The method of claim 24 wherein the new expression and each expression in the set of stored representatives of various expressions comprises a plurality of subregions

defined proximate each other, and wherein rendering includes rendering a synthesized subregion proximate each other to generate the new expression.

31. The method of claim 30 wherein rendering a synthesized subregion proximate each other includes blending at least some boundaries between adjacent subregions.

32. The method of claim 31 wherein blending occurs along boundaries without discontinuities in texture.

33. The method of claim 30 wherein at least one synthesized subregion is based on a quantity of a set of representatives different than another synthesized subregion.

34. The method of claim 25 and further comprising monitoring feature points of a user.

35. A computer implemented method for rendering synthesized facial expression, comprising:

rendering a facial expression with identified feature points;

receiving information indicative of a user moving a selected feature point;

accessing a set of stored representatives of various facial expressions having corresponding feature points associated therewith;

ascertaining a position of at least one feature point from a change in position of another feature point based on a change in movement of the

selected feature point and based on the set of stored representatives of various facial expressions; and
rendering a new facial expression with two or more feature points having changed position.

36. The method of claim 35 wherein the feature points are grouped in sets, each set pertaining to a different region of the synthesized image, and wherein ascertaining a position of at least one feature point comprises ascertaining positions of feature points in a set from a change in position of one feature point in the set.

37. The method of claim 36 wherein ascertaining a position of at least one feature point comprises ascertaining positions of feature points in the set using principle components derived from analyzing positional changes of feature points in the set of stored representatives of various expressions through principle component analysis.

38. The method of claim 37 wherein ascertaining a position of at least one feature point comprises ascertaining positions of feature points in a first set from a change in position of at least one feature point in another set.

39. The method of claim 38 wherein the sets are hierarchical.

40. The method of claim 35 wherein the new expression and each facial expression in the set of stored representatives of various facial expressions comprises a plurality of

subregions defined proximate each other, and wherein rendering includes rendering a synthesized subregion proximate each other to generate the new expression.

41. The method of claim 40 wherein rendering a synthesized subregion proximate each other includes blending at least some boundaries between adjacent subregions.

42. The method of claim 41 wherein blending occurs along boundaries without discontinuities in texture.

43. The method of claim 40 wherein at least one synthesized subregion is based on a quantity of a set of representatives different than another synthesized subregion.